

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:16

Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-1 LOCATION: See attached sketch.		
DRILLER: K. Keck		METHOD: 3 1/4" HSA, Autohammer		DATE: 12/19/13		SCALE: 1" = 4'	
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes
996.4	0.0						
994.4	2.0	FILL	FILL: Poorly Graded Sand with Silt, fine- to medium-grained, brown, moist.				
		FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, trace of Gravel, brown, moist.	9		0.0	
				6		0.0	
989.9	6.5						
989.4	7.0	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, light brown and light gray, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Silty Sand (SM)" with Gravel-sized pieces of Sandy Dolostone in split-spoon sampler. END OF BORING - REFUSAL TO AUGER AT 7 FEET. Water not observed while drilling. Water not observed to cave-in depth of 4 feet immediately after withdrawal of auger. Boring then backfilled.	*			* 50/0" (set)




(See Descriptive Terminology sheet for explanation of abbreviations)

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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-2		
DRILLER: K. Keck			METHOD: 3 1/4" HSA, Autohammer		DATE: 12/19/13		SCALE: 1" = 4'
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes
995.1	0.0						
993.1	2.0	FILL	FILL: Silty Sand, fine- to coarse-grained, trace of Gravel, brown, moist.			0.2	
991.1	4.0	FILL	FILL: Poorly Graded Sand with Silt, fine- to medium-grained, brown, moist.	53*		0.2	* High blow counts likely due to frost.
988.1	7.0	FILL	FILL: Poorly Graded Sand, fine- to medium-grained, brown, moist.	4		0.1	
		FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, trace of Gravel, brown, moist.	3		0.0	
			- Trace Concrete debris noted in 10-foot and 13-foot samples.	46		0.7	
981.1	14.0			2		0.2	
978.1	17.0	FILL	FILL: Silty Sand, fine- to coarse-grained, with Gravel and pieces of coal slag, dark brown, moist.	2		3.0	
977.3	17.8	FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, trace of concrete debris at 17.5 feet. <i>Boring continued as cored borehole</i>	*		0.1	* 50/4" (set)

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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-2 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet		Description of Core	Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks
Press (psi)	Return (%)									
977.3	17.8									
977.3	17.8		SHAKOPEE FORMATION, DOLOSTONE, light gray and gray, moist, highly weathered, moderately hard, very fine-grained, thin-bedded, intensely to highly fractured, vuggy.	4650	3.0	15-20	100	79	52	Q _u = 5,220 psi
					2.0					
975.3	19.8		SHAKOPEE FORMATION, SANDY DOLOSTONE, gray and light brown, moist, highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, highly fractured, vuggy.	4650	2.0	15-20	100	97	74	
					3.0					
973.5	21.6		SHAKOPEE FORMATION, SANDSTONE, light gray and light brown, moist, highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, intensely to moderately fractured, vuggy, with thin Dolostone seams throughout.		2.0					Groundwater observed at 21.9 feet after 3 days.





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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-2 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core		Bit Pressure (psi)	Rate of Advance (min/ft)	Water Press (psi) Return (%)		Rec. %	RQD %	Remarks
972.3	22.8	 SHAKOPEE FORMATION, SANDSTONE, light gray and light brown, moist, highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, intensely to moderately fractured, vuggy, with thin Dolostone seams throughout. <i>(continued)</i>		4650	2.0	15-20	100	97	74	
					3.0					
970.3	24.8	 SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and gray, moist, highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, intensely to moderately fractured, vuggy.		4650	3.0	15-20	100	81	37	
					2.0					
967.3	27.8									






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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-2 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core		Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks
967.3	27.8					Press (psi)	Return (%)			
			SHAKOPEE FORMATION, SANDSTONE, light brown, moist, highly weathered, soft to moderately hard, fine-grained, thin-bedded, intensely to highly fractured.	4650	1.0	15-20	100	81	37	
966.3	28.8				3.0					
			SHAKOPEE FORMATION, SANDSTONE, light brown, moist, highly weathered, soft to moderately hard, fine-grained, thin-bedded, highly fractured, vuggy.							
965.3	29.8									
			SHAKOPEE FORMATION, SANDY DOLOSTONE, light brown and gray, moist, highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, highly to moderately fractured, vuggy, with thin Sandstone and Shale layers throughout. 4 inch layer of green Shale at 34.5 feet.	4650	3.0	15-20	90	97	76	
					2.0					






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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-2 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core		Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks
962.3	32.8					Press (psi)	Return (%)			
			SHAKOPEE FORMATION, SANDY DOLOSTONE, light brown and gray, moist, highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, highly to moderately fractured, vuggy, with thin Sandstone and Shale layers throughout. 4 inch layer of green Shale at 34.5 feet. (continued)	4650	3.0	15-20	90	97	76	
960.3	34.8		SHAKOPEE FORMATION, SANDSTONE, light brown, moist, highly weathered, soft to moderately hard, fine-grained, thin-bedded, intensely to highly fractured, with thin Shale seams throughout.	4650	2.0	15-20	80	60	39	
958.3	36.8									
957.3	37.8		SHAKOPEE FORMATION, SANDY DOLOSTONE, gray and brown, moist, highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, highly to moderately fractured, vuggy.							




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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-2 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core		Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks
957.3	37.8					Press (psi)	Return (%)			
		END OF COREHOLE.								
		Auger met refusal at 17.8 feet.								
		Rock Coring started at 17.8 feet.								
		Temporary well installed at 37.8 feet.								
		Groundwater observed at 21.9 feet when rechecked after 3 days.								
		Temporary well, boring and corehole then grouted.								
										

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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-3 LOCATION: See attached sketch.				
DRILLER: B. Oldenberg			METHOD: 3 1/4" HSA, Autohammer		DATE: 12/19/13		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
997.6	0.0								
996.6	1.0	FILL	[Cross-hatch pattern]						
		FILL	[Cross-hatch pattern]			17.1			
			FILL: Silty Sand, fine- to coarse-grained, trace of Gravel, dark brown, moist.	8		11.5			
			FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, trace of Gravel, brown, moist.	2		46.0			
991.6	6.0	CONC	[Stippled pattern]						
			FILL: Concrete, retrieved as Poorly Graded Sand with Silt and Gravel, light brown and light gray, moist.						
989.8	7.8			*			* 50/4" (set)		
<i>Boring continued as cored borehole</i>									

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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-3 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core	Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks	
					Press (psi)	Return (%)				
989.8	7.8	 SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and light gray, moist, decomposed to highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, intensely to highly fractured, vuggy.	4650	0.8	15-20	70	33	0		
						40				
						10				
			0.3							
			0.7							
			2.0							
984.8	12.8									

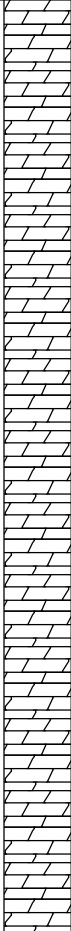


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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-3 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core		Bit Pressure (psi)	Rate of Advance (min/ft)	Water Press (psi) Return (%)		Rec. %	RQD %	Remarks
984.8	12.8	 SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and light gray, moist, very soft to moderately hard, very fine-to fine-grained, thin-bedded, intensely to highly fractured, vuggy. Decomposed layers of Dolostone retrieved as "Silt (ML)" throughout.		4650	2.2	15-20	0	53	8	
					2.3					
					2.1					
					2.2					
					4.8					
979.8	17.8									

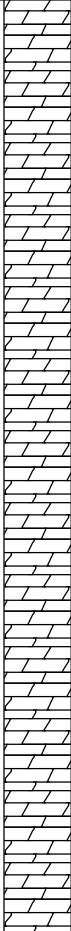


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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-3 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/19/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core	Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks	
					Press (psi)	Return (%)				
979.8	17.8	 SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and light gray, moist, decomposed to highly weathered, moderately hard, very fine- to fine-grained, thin-bedded, intensely fractured, vuggy.	4650	2.0	15-20	0	6	0		
				2.1						
				2.0						
				2.5						
				2.2						
974.8	22.8									



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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						BORING: ST-4 LOCATION: See attached sketch.			
DRILLER: K. Keck			METHOD: 3 1/4" HSA, Autohammer		DATE: 12/20/13		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
997.3	0.0								
997.0	0.3	CONC	3 inches of Concrete Pavement.						
		FILL	FILL: Clayey Sand, brown, wet.						
995.3	2.0								
		FILL	FILL: Clayey Sand, dark brown, moist.	21		0.0			
993.3	4.0								
		FILL	FILL: Clayey Sand, brown, moist.	11		0.0			
990.3	7.0								
		DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, light brown and light gray, dry, highly weathered, very fine- to fine-grained. Retrieved as "Silty Sand (SM)" with Gravel-sized pieces of Dolostone in split-spoon sampler.	50		0.0			
				*		0.0	* 30/6" (set), then 50/6"		
985.3	12.0								
		DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown, moist decomposed, very fine- to fine-grained. Retrieved as "Clayey Sand (SC)" in split-spoon sampler.	25		0.0			
982.7	14.6								
			END OF BORING - REFUSAL TO AUGER AT 14.6 FEET.	*			* 50/2" (set)		
			Water not observed while drilling.						
			Water not observed to cave-in depth of 11 feet immediately after withdrawal of auger.						
			Boring then backfilled.						

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:16

Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-5		
DRILLER: K. Keck					LOCATION: See attached sketch.		
METHOD: 3 1/4" HSA, Autohammer					DATE: 12/20/13		SCALE: 1" = 4'
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes
997.6	0.0						
997.2	0.4	CONC	5 inches of Concrete Pavement.				
996.9	0.7	AGG	3 inches of Aggregate Base.				
995.6	2.0	FILL	FILL: Sandy Lean Clay, trace of organics, black, moist.			0.0	
		FILL	FILL: Sandy Lean Clay, brown, moist.				
993.6	4.0			12		0.0	
		SP	POORLY GRADED SAND, fine- to medium-grained, brown, moist, loose. (Alluvium)	10		0.0	
			- Trace of Gravel at 8 feet.	10		0.0	
			- Trace of Clay from 9 to 12 feet.	10		0.0	
985.6	12.0	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and light gray, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Silty Sand (SM)" with Gravel-sized pieces of Sandy Dolostone in split-spoon sampler.	51		0.0	
983.6	14.0	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and light gray, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Silty Gravel (GM)" with Sand in split-spoon sampler.	22		0.0	
979.1	18.5		END OF BORING - REFUSAL TO AUGER AT 18 1/2 FEET. Water not observed while drilling at 10 1/2 feet. Water not observed to cave-in depth of 12 feet 9 inches immediately after withdrawal of auger. Boring then grouted.	*			* 50/1" (set)

(See Descriptive Terminology sheet for explanation of abbreviations)

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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-6 LOCATION: See attached sketch.				
DRILLER: K. Keck			METHOD: 3 1/4" HSA, Autohammer		DATE: 12/19/13		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
997.2	0.0	FILL	(Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)						
995.2	2.0	FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, trace of Gravel, brown, wet.	12		0.0			
				20		0.0			
990.2	7.0	FILL	FILL: Silty Sand, fine- to coarse-grained, with Gravel, brick, and concrete debris, brown, moist.	21		0.0			
985.7	11.5			6		0.0			
END OF BORING - REFUSAL TO AUGER AT 11.5 FEET. Water not observed while drilling. Water not observed to cave-in depth of 9 feet immediately after withdrawal of auger. Boring then backfilled.									

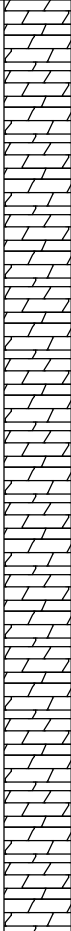
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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						BORING: ST-7	
DRILLER: K. Keck			METHOD: 3 1/4" HSA, Autohammer		DATE: 12/20/13		LOCATION: See attached sketch.
DRILLER: K. Keck		METHOD: 3 1/4" HSA, Autohammer		DATE: 12/20/13		SCALE: 1" = 4'	
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes
997.2	0.0						
995.2	2.0	FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, with Gravel, trace of roots, brown, moist.			4.0	
		FILL	FILL: Poorly Graded Sand with Silt, fine-to coarse-grained, trace of Gravel, brown, dry to moist.	28		21.0	
				31		0.0	
990.2	7.0						
989.2	8.0	CONC	CONCRETE: Retrieved as Poorly Graded Sand with Silt and Gravel, light gray, dry.	21		0.0	
		FILL	FILL: Clayey Sand, brown, moist.				
986.7	10.5		- Brick debris noted in auger cuttings at 10 feet.	5		6.0	
985.2	12.0	SS	SHAKOPEE FORMATION, SANDSTONE, brown, moist, decomposed, very fine- to fine-grained. Retrieved as "Silty Sand (SM)" in split-spoon sampler.				
		DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown ad gray, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Silty Sand (SM)" with Gravel-sized pieces of Dolostone in split-spoon sampler.	*		0.0	* 30/6" (set), then 50/6"
				*		0.0	* 43/6" (set), then 50/4"
980.2	17.0	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, light gray and light brown, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Silty Gravel (GM)" with Sand in split-spoon sampler.				
978.0	19.2		<i>Boring continued as cored borehole</i>	*			* 50/2" (set)

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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-7 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/20/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core	Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks	
					Press (psi)	Return (%)				
978.0	19.2									
978.0	19.2	 SHAKOPEE FORMATION, SANDY DOLOSTONE, light brown and gray, moist, highly to moderately weathered, moderately hard, very fine- to fine-grained, thin-bedded, intensely to moderately fractured, with thin seams of Sandstone and Shale throughout.	32.55	1.4	15-20	78	50	26	Q _u = 7,940 psi	
				2.1						
				2.0						
				2.5						
				3.9						
973.0	24.2									





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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-7 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/20/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core		Bit Pressure (psi)	Rate of Advance (min/ft)	Water Press (psi) Return (%)		Rec. %	RQD %	Remarks
973.0	24.2	 SHAKOPEE FORMATION, SANDY DOLOSTONE, light brown and gray, moist, highly to moderately weathered, moderately hard, very fine- to fine-grained, thin-bedded, highly to moderately fractured, with thin seams of Sandstone and Shale throughout.		3255	4.9	15-20	65	100	67	
				3720	3.5					
					2.1					
970.5	26.7	 SHAKOPEE FORMATION, SANDSTONE, light brown, moist, highly to moderately weathered, moderately hard, very fine- to fine-grained. Thin-bedded, intensely to moderately fractured, with thin layers of Dolostone throughout.			1.7					
					1.7					
968.0	29.2									






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LOG OF CORING




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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-7 (cont.)				
						LOCATION: See attached sketch.				
						DATE: 12/20/13		SCALE: 1" = 1'		
Elev. feet	Depth feet	Description of Core		Bit Pressure (psi)	Rate of Advance (min/ft)	Water Press (psi) Return (%)		Rec. %	RQD %	Remarks
968.0	29.2	 SHAKOPEE FORMATION, SANDY DOLOSTONE, gray, moist, highly to moderately weathered, moderately hard, very fine- to fine-grained, thin-bedded, highly to moderately fractured, vuggy, with Calcite nodules throughout.		3720	2.7	15-20	65	93	57	
					3.9					
					2.1					
965.0	32.2	 SHAKOPEE FORMATION, SANDSTONE, light brown, moist, highly to moderately weathered, soft to moderately hard, fine-grained, thin-bedded, intensely to highly fractured.			1.7					
				0.8						
963.0	34.2									
 <div style="display: flex; justify-content: space-between;"> Continued Next Page NOTES: </div>										

Q_u=2,500 psi

LOG OF CORING

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Braun Project RO-13-08144 Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						CORING: ST-7 (cont.)						
						LOCATION: See attached sketch.						
						DATE: 12/20/13			SCALE: 1" = 1'			
Elev. feet	Depth feet	Description of Core				Bit Pressure (psi)	Rate of Advance (min/ft)	Water		Rec. %	RQD %	Remarks
963.0	34.2							Press (psi)	Return (%)			
962.4	34.8		SHAKOPEE FORMATION, SANDSTONE, light brown, moist, highly to moderately weathered, soft to moderately hard, fine-grained, thin-bedded, intensely to highly fractured.			3720	2.4	15-20	65	98	86	** END OF COREHOLE.
			SHAKOPEE FORMATION, SANDY DOLOSTONE and DOLOSTONE, gray and light brown, moist, highly to moderately weathered, moderately hard, very fine- to fine-grained, thin-bedded, intensely to slightly fractured, vuggy, with Calcite nodules throughout.				3.9					Auger met refusal at 19.2 feet.
							4.2					Rock coring started at 19.2 feet.
						4650	2.8					Boring and corehole then grouted.
							2.6					
958.0	39.2		**									



NOTES:

Braun Project RO-13-08144						BORING:		HA-2	
Geotechnical Evaluation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						LOCATION: 9 feet south and 26 feet west of northeast corner in CJ's basement. See attached sketch.			
DRILLER: A. Kreofsky			METHOD: Hand Auger			DATE: 12/23/13		SCALE: 1" = 2'	
Depth feet		Description of Materials	BPF	WL	Tests or Notes				
0.0	Symbol	(Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)							
0.3	CONC	4 inches of Concrete Slab.							
0.7	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, dark brown and brown, moist, decomposed to highly weathered, very fine-to fine-grained. Retrieved as "Clayey Sand (SC)" with Gravel sized pieces of Sandy Dolostone in hand auger cuttings. END OF HAND AUGER - REFUSAL AT 0.7 FEET.							

Braun Project RO-13-08144			BORING: HA-3		
Geotechnical Evaluation			LOCATION: 6 feet north and 41 feet east of southwest corner in Jakobson Management basement. See attached sketch.		
Broadway at Center					
Broadway Avenue and Center Street					
Rochester, Minnesota					
DRILLER: A. Kreofsky		METHOD: Hand Auger		DATE: 12/23/13	
				SCALE: 1" = 2'	
Depth feet	Symbol	Description of Materials	BPF	WL	Tests or Notes
0.0		(Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)			
0.2	CONC	2 1/2 inches of Concrete Slab.			
0.4	FILL	FILL: Clayey Sand, trace of Gravel, dark brown, moist.			
1.2	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Clayey Sand (SC)" with Gravel-sized pieces of Sandy Dolostone in hand auger cuttings.			
		END OF HAND AUGER - REFUSAL AT 1.2 FEET.			

Braun Project RO-13-08144				BORING: HA-4	
Geotechnical Evaluation				LOCATION: 10 feet south and 12 1/2 feet east of northwest corner in Ginny's Fine Fabrics basement. See attached sketch.	
Broadway at Center					
Broadway Avenue and Center Street					
Rochester, Minnesota					
DRILLER: A. Kreofsky		METHOD: Hand Auger		DATE: 12/23/13	SCALE: 1" = 2'
Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
0.0					
0.5	CONC	6 inches of Concrete Slab.			
1.4	SS	SHAKOPEE FORMATION, SANDSTONE, brown and dark brown, moist, decomposed, very fine- to fine-grained. Retrieved as "Clayey Sand (SC)" in hand auger cuttings.			
1.7	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and light brown, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Lean Clay with Sand (CLS)" in hand auger cuttings.			
		END OF HAND AUGER - REFUSAL AT 1.7 FEET.			

Braun Project RO-13-08144			BORING: HA-5		
Geotechnical Evaluation			LOCATION: 9 feet south and 17 feet west of northeast corner in Ginny's Fine Fabrics basement. See attached sketch.		
Broadway at Center					
Broadway Avenue and Center Street					
Rochester, Minnesota					
DRILLER: A. Kreofsky		METHOD: Hand Auger	DATE: 12/23/13	SCALE: 1" = 2'	
Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
0.0					
0.2	CONC	2 1/2 inches of Concrete Slab.			
0.3	FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, brown, dry to moist.			
	SS	SHAKOPEE FORMATION, SANDSTONE, brown, moist, decomposed, very fine- to fine-grained. Retrieved as "Clayey Sand (SC)" in hand auger cuttings.			
1.7					
2.0	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown, moist, decomposed to highly weathered, very fine- to fine-grained. Retrieved as "Lean Clay with Sand (CLS)" with Gravel-sized pieces of Sandy Dolostone in hand auger cuttings.			
		END OF HAND AUGER - REFUSAL AT 2 FEET.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144A.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:30

Braun Project RO-13-08144A Drilling Investigation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-08 LOCATION: See attached sketch.				
DRILLER: R. Hansen			METHOD: 3 1/4" HSA, Autohammer		DATE: 1/30/14		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
997.6	0.0	FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, trace of Gravel to with Gravel at 6 feet, brown, frozen to moist at 3 feet.			0.6			
				19	0.4				
				8	0.5				
990.6	7.0	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, light brown and light gray, moist, decomposed to highly weathered, very fine- to fine-grained. Classified as "Silty Sand (SM)" with Gravel-sized pieces of Sandy Dolostone. END OF BORING - REFUSAL TO AUGER AT 8 FEET. Water not observed while drilling. Boring then backfilled.	*	0.4	* 4" (set), 50/9"			
989.6	8.0								

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144A.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:30

Braun Project RO-13-08144A Drilling Investigation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-09 LOCATION: See attached sketch.				
DRILLER: R. Hansen			METHOD: 3 1/4" HSA, Autohammer		DATE: 1/30/14		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
995.5	0.0								
993.5	2.0	FILL	FILL: Silty Sand, fine- to coarse-grained, trace of Gravel, brown, frozen.						
		FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, brown, frozen to moist at 6 feet.			2.0	* High blow counts likely due to frost.		
				63*		1.8			
				35		0.1			
				3		0.2			
				30		0.1			
			- Concrete, coal slag and cinder debris at 13 feet.			0.1			
				3		0.1			
				1		0.1			
						0.1			
						0.1			
978.5	17.0		END OF BORING - REFUSAL TO AUGER AT 17 FEET.	*		0.1	* 50/3" (set)		
			Water not observed while drilling.						
			Boring then backfilled.						

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144A.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:30

Braun Project RO-13-08144A Drilling Investigation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-10 LOCATION: See attached sketch.				
DRILLER: R. Hansen			METHOD: 3 1/4" HSA, Autohammer		DATE: 1/30/14		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
998.0	0.0	FILL	FILL: Poorly Graded Sand with Silt, fie- to coarse-grained, with Gravel, brown, moist.	4		0.7			
						1.0			
				3		1.4			
990.0	8.0	FILL	FILL: Concrete, classified as Poorly Graded Sand with Silt and Gravel, light brown and light gray, moist.	13		2.8			
				11		1.2			
987.0	11.0		END OF BORING - REFUSAL TO AUGER AT 11 FEET. Water not observed while drilling. Boring then backfilled.	*		* 50/4" (set)			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144A.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:30

Braun Project RO-13-08144A Drilling Investigation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota					BORING: ST-11 LOCATION: See attached sketch.				
DRILLER: R. Hansen		METHOD: 3 1/4" HSA, Autohammer		DATE: 1/30/14		SCALE: 1" = 4'			
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
997.6	0.0								
997.2	0.4	PAV	5 inches of Concrete pavement.						
996.9	0.7	AGG	3 inches of Aggregate Base.						
		FILL	FILL: Sandy Lean Clay, brown, frozen.			2.0			
994.6	3.0								
		FILL	FILL: Poorly Graded Sand with Silt, fine- to medium-grained, brown, frozen to moist at 5 feet.	32*		0.2	* High blow counts likely due to frost.		
				20		0.5			
				10		0.4			
				12		0.2			
				16		0.4			
983.6	14.0								
		DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown, moist, deocmposed to highly weathered, very fine- to fine-grained. Classified as "Clayey Sand (SC)" with Gravel-sized pieces of Sandy Dolostone.	12		0.1			
981.6	16.0		END OF BORING - REFUSAL TO AUGER AT 16 FEET.			0.4			
			Water not observed while drilling.						
			Boring then backfilled.						

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144A.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:30

Braun Project RO-13-08144A Drilling Investigation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						BORING: ST-12 LOCATION: See attached sketch.			
DRILLER: R. Hansen			METHOD: 3 1/4" HSA, Autohammer		DATE: 1/31/14		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
997.2	0.0	FILL	(Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, trace of Gravel, brown, frozen to moist at 6 feet. - Odor noted at 3 to 4 feet.			0.2	* High blow counts likely due to frost.		
				34*		0.2			
				24		0.2			
989.7	7.5	FILL	FILL: Silty Sand, fine- to coarse-grained, with Gravel, brown, moist. - Brick and concrete debris at 8 feet.	37		0.3			
				7		1.1			
985.2	12.0		END OF BORING - REFUSAL TO AUGER AT 12 FEET. Water not observed while drilling. Boring then backfilled.						

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\ROCHESTER\2013\08144A.GPJ BRAUN_V8_CURRENT.GDT 1/5/15 14:30

Braun Project RO-13-08144A Drilling Investigation Broadway at Center Broadway Avenue and Center Street Rochester, Minnesota						BORING: ST-13 LOCATION: See attached sketch.			
DRILLER: R. Hansen			METHOD: 3 1/4" HSA, Autohammer		DATE: 1/31/14		SCALE: 1" = 4'		
Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	PID (ppm)	Tests or Notes		
997.2	0.0	FILL	(Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)						
		FILL	FILL: Poorly Graded Sand with Silt, fine- to coarse-grained, with Gravel, brown, frozen to moist at 6 feet.			0.8			
				99*		0.9	* High blow counts likely due to frost.		
				26		0.4			
			- Concrete debris at 8 feet.	28		0.6			
			- Concrete debris at 10 feet.	17		1.0			
985.2	12.0	DOL		50		1.0			
984.2	13.0	DOL	SHAKOPEE FORMATION, SANDY DOLOSTONE, brown and gray, moist, decomposed to highly weathered, very fine- to fine-grained. Classified as "Silty Sand (SM)."						
			END OF BORING - REFUSAL TO AUGER AT 13 FEET.						
			Water not observed while drilling.						
			Boring then backfilled.						